

San Luis Obispo County Emergency Operations Plan

Part 6

Profile of San Luis Obispo County and Overview of Hazards and Threats

1. SAN LUIS OBISPO COUNTY PROFILE

San Luis Obispo County is located on the central coast of California, approximately half-way between San Francisco and Los Angeles. It is the northern-most county/Operational Area on the coastal side of the California Office of Emergency Services' Southern Region.

San Luis Obispo County covers an area of approximately 3,316 square miles. The county landscape is defined by five mountain ranges, forming five principal drainage basins aligned on a predominately northwest to southwest axis. The ranges include the Santa Lucia, Temblor, Caliente, and La Panza mountains. While none of the ranges are particularly high, they are effective visual and climatic barriers between each of the regions they define. The western county boundary is defined by about 96 miles of the Pacific Ocean coastline. Most urban and intensive agricultural uses in the county occur in the valleys and coastal terraces of the western most ranges.

Climate

The climate and air quality of San Luis Obispo County are directly related to its physical characteristics. The coastal lowlands and plains are bounded on the east by the Santa Lucia Mountains and experience a maritime climate. That climate is somewhat modified locally by elevation and distance from the ocean, as well as the mountains. The north and northeastern portions of the county include the upper end of the Salinas Valley, where the maritime climate is substantially modified by the intervening mountains. The Carrizo Plain in the east and southeastern portion of the county is climatically high desert.

Because the county is located along the California coast, the weather is normally under the influence of a high pressure system located to the west. As a result, a common weather pattern includes afternoon and evening onshore winds. However, a more significant characteristic of the high pressure area, from the air quality standpoint, is a temperature inversion.

The county has a number of microclimate areas. The National Weather Service has San Luis Obispo County broken into three forecast zones.

Water

Water for urban uses in the county are obtained from surface impoundments such as the Santa Margarita Lake, Whale Rock and Lopez reservoirs, natural underground aquifers, and the Coastal Branch of the State Water Project. A recent addition to the water supply systems since the 2008 update of the EOP include a pipeline and related infrastructure having been put in place which is used to provide water from Lake Nacimiento to a number of communities throughout San Luis Obispo County.

Water for agricultural uses comes almost entirely from the aquifer groundwater supplies.

Major streams in the county that flow into the Pacific Ocean include Toro Creek, Chorro Creek, Coon Creek, San Luis Obispo Creek, Pismo Creek, Arroyo Grande Creek, Oso Flaco Creek, Santa Rosa Creek, and the Santa Maria River. Most of these streams are intermittent, based on rainfall. There is a major tidal inlet at Morro Bay.

Population and County Lay Out

As of January 1, 2014, the county was listed by the California Department of Finance as having an estimated population of 272,357, with 119,272 of those living in the unincorporated county areas.

Of the seven incorporated cities, the largest by population is San Luis Obispo with 45,473, followed by Paso Robles with 30,469, Atascadero with 28,675, Arroyo Grande with 17,334, Grover Beach with 13,153, Morro Bay with 10,276, and Pismo Beach with 7,705 (note: totals are not exact due to rounding).

The population of the county is generally concentrated in four regions, each relating to generally distinct physical and trade areas:

North County – The area north of the Cuesta Grade or Cuesta Ridge. North county communities include San Miguel, Shandon, Cholame, Creston, Paso Robles, Templeton, Atascadero, and Santa Margarita. Most areas of the interior portion, including the Carissa Plain area of the southeastern area of the county are accessible from the north county area.

North Coast - The coastal terrace and adjacent upland areas south of the Monterey County line near the coast, including the communities of San Simeon, Cambria, Cayucos, Morro Bay and Los Osos, Baywood Park.

San Luis Obispo - The inland area surrounding the county seat which is the major employment and trade center of the county; this area also includes the beach area community of Avila Beach.

South County - The coastal terrace, upland, and near coast valleys concentrated on Highway 101, extending from Ontario Grade south to the Santa Barbara County line including, the communities of Pismo Beach, Arroyo Grande, Grover Beach, Oceano, Halcyon, and Nipomo.

Surrounding counties include Monterey, Kings, Kern, and Santa Barbara. To the very southeastern portion of San Luis Obispo County, the northwestern Ventura County line is less than four miles east of the San Luis Obispo County line. The northwestern portion of the Los Angeles County line is less than 40 miles from the southeastern portion of the San Luis Obispo County line. The intersection of California Highways 166 and 33 is in San Luis Obispo County.

Economy

Historically, the economy in San Luis Obispo has been oriented toward – and continues to be - agriculture, tourism, and services (including government). After 1940, a diversified economy resulted from substantial increases in the services and trade sectors, coupled with the establishment and expansion of three large state institutions: California Polytechnic State University, Atascadero State Hospital, and the California Men's Colony (a California Department of Corrections and Rehabilitation prison). Public utilities also employ a substantial number of residents.

The trade and services sectors have continued to increase in importance and this trend is expected to persist. The projected employment growth in the trade and services sectors reflects an expanded tourist economy and a growing local serving retail trade. Agriculture plays a large role in the county's economy,

including wine grapes. Agriculture and tourism have vied for the number one industry title within San Luis Obispo County in past years, although in recent years agriculture has retained the number one title.

Major Recreation Areas

San Luis Obispo County has diverse and varied choices for recreational activities. In the north coast area of the county, recreation areas include the William Hearst Memorial State Beach and, San Simeon State Beach, as well as Hearst Castle. In the central coastal area of the county recreation includes Cayucos County Beach, Morro Strand State Beach, Morro Dunes Campground, Morro Rock, Morro Bay, Morro Bay State Park, and Montana De Oro State Park.

In the southern coastal part of the county recreation areas include Port San Luis, Avila Beach, Pismo Beach State Beach, Oceano Dunes State Vehicular Area, Oceano Memorial County Park, and Oceano/Nipomo Dunes.

In addition, activities related to the wine industry, including wine tours and related events occur throughout the county and have increased in activity during recent years.

Inland activities include Lake Nacimiento and its related recreational areas, Lopez Lake, Santa Margarita Lake, and the Los Padres National Forest. Just to the north of the inland county line in Monterey County is Lake San Antonio, which is used by many San Luis Obispo County residents as well as visitors from outside of the area.

Transportation Systems

The county contains major transportation arteries including U.S. Highway 101, California State Highways 1, 41, 46, 58, and 166, and the Union Pacific Railroad. The county has a regional airport near the southern portion of city of San Luis Obispo which offers service to larger commercial airports to the north and south (Los Angeles and San Francisco, as well as flights to Phoenix; designations listed are as of May 2013). In addition to air transportation the county is also served with scheduled rail service by Amtrak, and bus service by companies such as Greyhound, Amtrak California, and Orange Belt Stages, as well as number of tour coach operators, and local and regional transit systems.

Most areas of the county with a population concentration are served with various types of bus service by the San Luis Obispo County Regional Transit Authority (RTA). RTA was formed through a joint powers agreement (JPA) between the County of San Luis Obispo and each of the seven cities incorporated within the county to provide intercity fixed route service and ADA para-transit service.

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1. OVERVIEW OF HAZARDS AND THREATS

There are a number of potential natural and technological threats which could impact San Luis Obispo County, including earthquakes, hazardous material incidents, flooding, dams, wildland fire, urban fire, urban interface fire, commercial nuclear power plant, tsunamis, drought, freeze, terrorism, and other natural and technological hazards.

In addition to the information shown on the following pages, maps and more detailed information on a number of particular threats is available in the San Luis Obispo County Safety Element (December 1999) or the San Luis Obispo County Local Hazard Mitigation Plan (LHMP, August 2011). The Safety Element can be reviewed or purchased from the County Planning Department. The LHMP can be reviewed or obtained from County OES, including on the County OES web site. As of June 2014, an updated LHMP is completed and is undergoing the State and FEMA review process. When that update is approved by Cal OES and FEMA, it will be posted on the County OES web site.

1.1 Earthquake Faults

Area Faults

San Luis Obispo County is located in a geologically complex and seismically active region. Like other areas of California, there are a number of active or potentially active fault systems throughout San Luis Obispo County. Small earthquakes, in the range of magnitude 2.0 - 2.7 and smaller, occur quite often throughout and near the county. Larger earthquakes do occur occasionally, as demonstrated by the magnitude 6.5 December 2003 San Simeon Earthquake, and the 6.0 September 2004 Parkfield Earthquake, centered just north of the Monterey County line.

The 6.5 magnitude San Simeon Earthquake occurred during the morning of December 22, 2003. Two people lost their lives in the city of Paso Robles and an estimated \$239,000,000 in damages occurred throughout the county.

The magnitude 6.0 Parkfield Earthquake during September 2004 caused relatively minimal damage and no known injuries.

In 1966 an earthquake occurred on the Parkfield segment of the San Andreas fault. The earthquake was in the 5.6 to 5.8 range and caused minor to moderate damage in the county.

It is not unusual for small, non-damaging earthquakes to occur throughout and near the county from time-to-time.

Much of the information shown below is extracted from the Safety Element of the San Luis Obispo County General Plan and the County's LHMP.

CAMBRIA FAULT

The northwesterly trending Cambria fault is approximately 64 kilometers long, including an 8 kilometer projection across Estero Bay. Hall and Prior (1975) show the fault coming back onshore near Morro Bay, and converging with the Oceanic and West Huasna fault near San Luis Obispo. The Cambria fault is considered potentially active (source: the Safety Element of the San Luis Obispo County General Plan). The Safety Element of the San Luis Obispo County General Plan lists the maximum moment magnitude as 6.25 for the Cambria.

EAST HUASNA FAULT

The East Huasna fault zone trends north-northwest for a distance of about 70 kilometers from near Sisquoc in Santa Barbara County northward until it intersects with the South Cuyama fault about 20 kilometers east of the city of San Luis Obispo. The fault is considered potentially active (source: the Safety Element of the San Luis Obispo County General Plan).

HOSGRI FAULT

See San Simeon-Hosgri fault zone

LA PANZA FAULT

The northwest trending La Panza fault has been mapped for 71 kilometers along the western base of the La Panza Range (Jennings, 1994). The La Panza fault has been identified as a thrust or reverse fault by Clark and others (1994). The La Panza fault is considered potentially active (The Safety Element of the San Luis Obispo County General Plan). The Safety Element of the San Luis Obispo County General Plan lists the maximum moment magnitude as 5.0 - 7.5 for the La Panza.

LOS OSOS AND EDNA FAULT ZONES

The Los Osos fault zone has been mapped generally in an east/west orientation, along the northern flank of the Irish Hills. The western end of the onshore fault zone is located near the community of Los Osos, and the eastern end located near U.S. Highway 101. To the east of U.S. Highway 101, the fault may continue along the northeast flank of the Irish Hills as the Edna fault zone.

Assuming an overall length of 35 miles, the Los Osos fault has the potential to generate and earthquake with about a magnitude 6.75 (reference/source: the Safety Element of the San Luis Obispo County General Plan).

NACIMIENTO FAULT ZONE

The **Nacimiento Fault Zone** has been mapped as a regional fault by many investigators, however it is not included as part of the data base of California faults by the California Geological Survey. While the fault is considered inactive (reference Jennings, per the San Luis Obispo County Safety Element, December 1999), the Bryson earthquake of 1952 is sometimes assigned to the Nacimiento fault zone, and would make the fault seismically active (reference: San Luis Obispo County Safety Element, December 1999). The Bryson earthquake, which occurred in a rural area of northern San Luis Obispo County, is poorly understood and may be attributed to movement on other faults such as the active San Simeon or potentially active Riconada fault zones.

The faults that make up the Nacimiento fault zone enter the county in the vicinity of Lake Nacimiento. Faults, or portions of the faults, related to this system trend southwest near the city of Paso Robles, parallel Highway 101, pass through or near Templeton, through or near the city of Atascadero, through the area in and near Santa Margarita, and continue south. Given the fault's proximity to major population centers, structures, dams, transportation and pipeline routes, it could pose a serious threat to the county.

RINCONADA FAULT ZONE

The **Rinconada Fault Zone** has been mapped as a regional fault zone about 189 kilometers (about 117 miles) long located along the western margin of the La Panza Range. The Rinconada fault is inferred to be part of a zone of faults including the Jolon, San Marcos, Espinosa, and Reliz faults that extends from Monterey Bay southward to its juncture with the Nacimiento fault. The California Geological Survey considers the Rinconada fault to be potentially active (source: the Safety Element of the San Luis Obispo County General Plan). The Safety Element lists the maximum moment magnitude as 7.3 for the Rinconada.

SAN ANDREAS FAULT

The **SAN ANDREAS** is a historically active fault thought to be capable of an earthquake up to and above the 8.0 magnitude range and generally runs along the eastern county border. It enters the county near the Cholame area, passes through the Carrizo Plain, and exits the county near Maricopa.

As it passes through the county, three relatively distinct portions of the fault have separate potentials for causing a damaging earthquake. The portion of the fault that runs from Monterey County into San Luis Obispo County to an area near Cholame has commonly been known as the Parkfield segment of the San Andreas fault system. That portion of the fault system is the one that has an approximate 5.6 - 5.8 magnitude earthquake from time to time. A segment of the system that runs from approximately the Cholame area to about the northern edge of the Carrizo

Plain area has been commonly known as the Cholame segment. The portion running from the northern Carrizo Plain area and out of the county into Kern County has been commonly known as the Carrizo segment.

Due to the relative frequency of about 6.0 magnitude earthquakes occurring on the Parkfield segment (one on the average of every 22 years) in the past, the U.S. Geological Survey and others had projected that approximate 6.0 was possible. That projection was been validated by the California Earthquake Prediction and Evaluation Council (CEPEC). A 6.0 did occur in September 2004 in the Parkfield area.

It is believed that in 1857 a large (possible 7.8 or larger) earthquake occurred on the San Andreas fault that possibly originated in the Parkfield area and stretched along the fault to the area near San Bernardino. This is perhaps an illustration of the potential for the San Andreas to cause a very powerful earthquake and thus the need to be prepared.

A major earthquake along any section of the San Andreas Fault could result in serious damage within San Luis Obispo County. An earthquake of 8.0 or greater magnitude would result in severe ground motion, and could cause damage throughout the county.

Small earthquakes do occur in the area of the San Andreas within our county from time to time, perhaps most frequently in the Parkfield and nearby areas. Generally, they are so small or in such isolated areas that they are not felt, or are felt only very close by.

SAN SIMEON - HOSGRI FAULT ZONE

The San Simeon-Hosgri fault system generally consists of two fault zones: the Hosgri fault zone represented by a series of faults that are mapped off the San Luis Obispo County coast; and the San Simeon fault zone, which appears to be associated with the Hosgri, and comes onshore near the pier at San Simeon point. The San Simeon fault is considered to be active (reference: San Luis Obispo County Safety Element, December 1999).

The Hosgri fault zone has been interpreted to extend from the northern termination west of the southern San Simeon fault in the Cambria/Point Estero area to its southern termination offshore of Point Perdernes (PG&E 1988), which is south of the Santa Maria River, off of Santa Barbara County.

The Safety Element of the San Luis Obispo County General Plan lists the maximum moment magnitude as 7.3 for the Hosgri-San Simeon.

SHORELINE FAULT

In 2008, the Shoreline Fault was discovered off the coast in the area of the Diablo Canyon Power Plant which is owned and operated by Pacific Gas and Electric Company (PG&E). The initial study of the fault, using conservative assumptions about the total length of the fault zone, indicates that a potential magnitude 6.5 strike-slip earthquake is possible. Follow up investigations were performed by PG&E in 2009 and 2010 and more detailed studies are planned in order to refine the size and potential of the fault. (Report on the Analysis of the Shoreline Fault Zone, Central Coastal California, Report to the U.S. Nuclear Regulatory Commission, January 2011, PG&E)

PARTIAL LISTING of OTHER LOCAL FAULTS

There are a number of other faults within the county including the Cayucos, Edna, Morales, Oceano, Pecho, Pismo, Wilmar Avenue, San Juan, Indian Knob fault, San Luis Bay fault, San Miguelito fault, and the West Huasna/Oceanic fault zone.

It is important to note that it is possible an earthquake could occur on an unknown fault in areas other than currently known faults.

Additional fault information can be found in the County's Safety Element, which may be purchased from the County Planning Department. Official State of California geologic maps, with earthquake faults shown, may be purchased from the California Geological Survey.

1.1.1 EFFECTS OF A DAMAGING EARTHQUAKE

The effects of an earthquake can range from essentially no damage to heavy damage with fatalities. Moderate to heavy damage earthquakes may cause the following problems:

- Command and Coordination
- Situation Reporting
- Building Collapse Causing Need for Rescue
- Mass Injuries
- Hospital Disruptions
- School Disruptions
- Hazardous Material Releases
- Major Fires
- Dam Failures/flooding
- Need for Evacuation
- Utility Disruptions - Gas
- Utility Disruptions - Electric
- Utility Disruptions - Water
- Utility Disruptions - Sanitation
- Disruptions of Operations at Power Plants
- Transportation System Disruptions
- Communication Disruptions

- Need for Emergency Public Information
- Need for Security Within Affected Areas
- Need for Emergency Logistical Support
- Need to Assist Displaced Persons
- Need for Building Inspections
- Disease and Health Hazards

1.2 Hazardous Materials Threat Assessment

Our society produces numerous chemicals that enhance our lives. Like many other areas, hazardous materials are produced and used throughout San Luis Obispo County. These products are located in virtually all communities, and many of these chemicals are hazardous to the health and safety of humans. As a result, an accident involving hazardous materials may have catastrophic results.

A primary threat is from transportation accidents involving hazardous materials, although mishaps at fixed locations throughout the county could also pose a problem. Vast quantities of materials are transported through the county by trucks and rail. In addition, a limited number of underground pipes could also pose a problem if a rupture or leak occurred. There is also the possibility chemicals could be used as a weapon by criminals and/or terrorists.

There are a variety of effects that may be caused by an uncontrolled release of hazardous materials. The effects on humans depend on the type and amount of material released, however some of the health hazards include material that may be fatal if inhaled, swallowed, or absorbed through skin; some hazardous materials may cause burns to skin and eyes upon contact; material that catches on fire may produce irritating or poisonous gases; some materials may cause dizziness or suffocation. In addition to the direct human threat, hazardous materials or runoff from fire control may cause pollution and create fire or explosion hazards in sewer systems or other waterway areas.

The toxicity of hazardous materials varies and in some cases exposure to a small quantity of material may cause serious injury or death.

1.2.1 San Luis Obispo County Situation

The county contains major transportation arteries, such as US 101 and the Union Pacific Railroad, each carrying thousands of tons of hazardous materials through the county each year. Although as of May 2013, Union Pacific was rarely using the rail line through the county for full freight train service. None-the-less, the county is potentially exposed to the effects of a possibly catastrophic hazardous material emergency due to the proximity of US 101 and the railroad to densely populated areas in the county.

Additionally, major east/west highways, such as Highways 41, 46 and 166, traverse the county, facilitating what is perhaps a smaller volume of traffic, however still with the potential for incidents to occur.

Although the county no longer has major coastal oil terminals, underground pipelines with various products traverse the county, and there is an oil operation east of the city of Pismo Beach. In addition, a railroad tank load of oil passes through the county on a regular basis heading from oil fields in Southern Monterey County to Southern California for processing.

Agriculture utilizes large quantities of pesticides which are stored at numerous sites around the county. Fixed facilities that use hazardous materials are located throughout the county however most handle relatively small amounts. Air transportation of hazardous materials involves the smallest quantities but still poses a potential hazard.

1.2.2 Emergency Readiness

While most hazardous material incidents are contained rather quickly and at minimum loss to health and safety, the potential exists for accidents to occur that cannot be easily mitigated. Large accidents or accidents involving an unusually toxic material may cause widespread damage and threaten the health and safety of the public.

A large or highly toxic release may require evacuation, technical expertise, and limiting access to the affected area. In turn, these actions might require the opening of temporary shelters, closing streets and highways, and providing extensive public education through the media and other means. In addition, logistical support may need to be provided to assist hazardous material teams in containing the release and with planning efforts to minimize the effects of a hazardous material incident.

Within San Luis Obispo County, the fire agency of jurisdiction generally has incident command authority over all haz mat incidents located off of roads and highways and on roadways in incorporated cities. On roads and highways which the California Highway Patrol has investigative jurisdiction, that agency has incident command authority over haz mat incidents.

As defined in the County's Hazardous Material's Emergency Response Plan, the above agencies are supported by many others including County Division of Environmental Health, who serves as the hazardous materials area administrator for most Operational Area jurisdictions. The County's Hazardous Materials Emergency Response Plan is considered an attachment to this plan by reference.

1.2.3 Facilities within the County

The number of facilities that use hazardous substances within the county is in the hundreds. A listing of these facilities is maintained by, and available for review at, the County Division of Environmental Health.

1.3 Storm Damage/Flooding

Due to the unique weather patterns in California, the potential danger of problems caused by severe weather can easily occur. Floods are a natural occurrence along stream beds and creek areas as a result of torrential rains. Flash flooding can be caused by heavy localized rainfall, which can turn streets and creek beds into raging torrents of water capable of causing extensive damage and posing a danger to the public.

The hazard can be easily increased when heavy rains are accompanied by strong winds. This threat can be compounded by the fact that citizens may not be readily aware of the dangers of extreme storms, especially the hazard of flash floods.

Citizens caught in low lying areas during a flash flood can easily have their lives threatened. These flash floods can be extremely dangerous in urban areas due to the lack of natural cover. Heavy rains may cause flash floods that may inundate automobiles and cause streets to become temporary stream beds. Flooding from an overflowing tributary may also be hazardous, and the potential for a threat to life does exist, and the possible damage to property may be extreme.

The National Weather Service provides flood and flash flood warnings for small tributaries and other potentially affected areas. These warnings may provide time to prepare for possible flooding. These preparations could include public warnings, closing streets in low lying areas, and obtaining sandbags for private and public use.

1.3.1 San Luis Obispo County Situation

Due to the mix of urban and rural environments within San Luis Obispo County, along with a diverse geography, the effects of flooding are varied. Urban areas may receive flooding that could inundate buildings and cause street flooding. Rural areas could see normally dry stream and creek beds flow rapidly within a relatively short period of time.

Due to unique weather patterns in the area, the National Weather Service (NWS) has San Luis Obispo County broken into three weather forecast zones: San Luis Obispo County Central Coast, San Luis Obispo County Interior Valleys, and San Luis Obispo County Mountains. There are, generally, the coastal areas, north county/interior areas and mountain zones along the south county area.

1.3.2 Emergency Readiness

The County Public Works Department serves as the administrator of the flood control district in certain areas of the county. During flooding emergencies, the Public Works Department does not usually respond to flooding incidents on private property unless it is the result of something the County is responsible for maintaining (for example, runoff from a plugged county culvert). County Public Works usually responds to incidents only on County roads and other County infrastructure.

Many fire agencies within the county respond to flooding on private property as a public service, if they have resources available.

For weather watch and warning purposes, flash flood watches and/or warnings are issued by the National Weather Service, and the public is notified through the media, as appropriate.

Due to the wide ranging effects that may occur as a result of flooding, County OES usually maintains close contact with the National Weather Service during periods of intensely adverse

weather. Should coordination of events such as widespread flooding response and evacuations be necessary, County OES may activate the County EOC or an alternate coordination center.

Other key agencies may also be involved with flooding situations. For instance, the Sheriff's Department may assist in evacuations, notifying cities, and issuing media information via the "News Line"; County/Cal Fire may provide rescue services, respond to downed wires, public service assists; the Red Cross may be involved by opening shelters, should that become necessary.

Other weather related emergencies may involve coastal wave surges, windstorms, snow, and possibly unforeseen events. A response to these types of events may be necessary by County organizations/agencies such as road crews, fire departments, or law enforcement.

1.4 Dam or Levee Failure

While the likelihood of a dam failing in San Luis Obispo County is very remote, the possibility does exist. There are seven dams in or near the county that may have an adverse effect on citizens, property, and other resources should any one of them fail. There are also two levees which could be a significant threat to surrounding areas. An eighth dam, Nacimiento, is located entirely within the boundaries of San Luis Obispo County however it is owned and operated by the County of Monterey. Due to the proximity of Nacimiento Dam to Monterey County, the primary threat would be to people in Monterey County itself. As a result, Monterey County maintains an Emergency Operations Plan for Nacimiento, although some water could flow back down the Salinas River and over its banks, possibly affecting San Miguel.

1.4.1 Hazard Assessments for Specific Dams and Levees

Lopez Dam At full capacity, Lopez Reservoir contains 49,388 acre feet of water behind an earth filled dam constructed in 1969. A project to increase the dam's strength to withstand an earthquake took place in 2001-2002. Lopez Dam is owned and operated by San Luis Obispo County Flood Control and Water Conservation District.

In the event of complete dam failure, water is expected to flow in a westerly direction, following the channel of Arroyo Grande Creek (approximately 3,000 feet in each direction of the centerline of the creek), to and through the jurisdictions of the cities of Arroyo Grande and Grover Beach, the community of Halcyon, impacting parts of Oceano and Pismo Beach, and dissipating into the Pacific Ocean. Potential major impact to life and property in the communities of Arroyo Grande, Grover Beach, Halcyon, Oceano and Pismo Beach is possible.

If the dam ruptured while the reservoir was at full capacity, approximately 10,000 - 12,000 residential and business occupants in the county could be affected. Special facilities affected may include Biddle Park (weekend and holiday estimated population 500+), Pismo State Beach/Oceano Campground (weekend and holiday estimated population 300+), Oceano Airport, Arroyo Grande High School, South County Sanitation District wastewater treatment plant, and Union Pacific Railroad. Roads flooded may include parts of Lopez Drive, Huasna Road at Lopez Drive, and Highway 1 in Oceano. Facilities near the mapped inundation area include

Arroyo Grande Community Hospital, Harloe Elementary School, Oceano Elementary School, and care facilities for the elderly.

Using information from the year 1999 “Inundation Map Given the Hypothetical Failure of Lopez Dam”, with the assumption that initial reservoir storage was at 100%, it is estimated that flood waters from the failure of the dam could reach Huasna Road in about 30 minutes and U.S. 101 in about 40 minutes.

Righetti Dam At full capacity, Righetti Reservoir contains 591 acre-feet of water behind an earth filled dam constructed in 1966. It is owned and operated by a private party.

In the event of a complete dam failure, water is expected to flow in a southwest direction along West Corral de Piedra Creek (approximately 200 to 1,000 feet in each direction of the centerline of the creek), dissipating at Highway 227. No major impact to life and property is anticipated.

Approximately 40 residential occupants in the county could be affected. No special facilities would be affected by a dam failure. Roads flooded may include parts of Righetti Road; Orcutt Road at Biddle Road; and Highway 227 for approximately 2,000 feet north of Carpenter Road.

Salinas/Santa Margarita Dam At full capacity, Salinas Reservoir contains 23,000 acre-feet of water behind a concrete (variable radius arch) dam constructed in 1942. It is owned by the U.S. Army Corps of Engineers and operated by San Luis Obispo County Flood Control and Water Conservation District.

In the event of a complete dam failure, water is expected to flow in a northerly direction along the Salinas River approximately 300 to 500 feet in each direction of the centerline of the river, with occasional fingers in low lying areas, up to the Atascadero area; at Atascadero, the flood area widens again to approximately 1,000 feet each side of the centerline of the river up to Wellsona; at Wellsona it widens again to 2,000 feet each side of the centerline of the river up to San Miguel; at San Miguel it narrows slightly up to and past the Monterey County line and Camp Roberts. No major impact to life and property along these inundation boundaries is anticipated, as much of the water will be retained in the Salinas river bed.

Approximately 1,000 -2,000 residential and business occupants in the county could be affected. Special facilities affected may include the Union Pacific rail lines. Major roads flooded may include parts of Las Pilitas Road, I, State Highways 41, 46 and 58, Indian Valley Road, North River Road near Paso Robles, Highway 101, Cross Canyon Road, and Main Street in Templeton.

San Antonio Dam At full capacity, San Antonio Reservoir contains 348,000 acre-feet of water behind a earth filled dam constructed in 1965. It is owned and operated by the Monterey County Flood Control and Water Conservation Districts. The dam and the majority of the flood inundation area is located within Monterey County.

In the event of complete dam failure, primary flooding would occur in Monterey County, and only one small pocket within San Luis Obispo County would pose a safety risk to county residents. This pocket would not pose a major impact to life and property.

Approximately 3 to 7 residential occupants in this county could be affected. There are no special facilities. Roads flooded may include parts of Nacimiento Lake Drive (County G19).

Terminal Dam At full capacity, Terminal Reservoir contains 844 acre-feet of water behind an earth filled dam constructed in 1969. It is owned and operated by the San Luis Obispo County Flood Control and Water Conservation Districts.

In the event of a complete dam failure, water is expected to flow in a southerly direction, following the channel of Arroyo Grande Creek (approximately 300-1,000 feet in each direction of the centerline of the creek) for approximately 2.5 miles. No major impact to life and property is anticipated.

Approximately 15 residential occupants in the county could be affected. No special facilities would be affected by a dam failure. Roads flooded may include parts of Lopez Drive and Cecchetti Road.

Twitchell Dam At full capacity, Twitchell Reservoir contains 240,100 acre-feet of water behind an earth filled dam constructed in 1958. It is owned by the Bureau of Reclamation and operated by the Santa Maria Valley Water Conservation District.

In the event of a complete dam and levee failure, primary flooding would occur in Santa Barbara County, and only a few pockets within San Luis Obispo County would pose a life safety risk to county residents. These pockets, located in the southern part of the Oso Flaco area, would not pose a major impact to life and property.

Approximately 160 migrant workers, residential and business occupants in the county could be affected. Special facilities affected may include the Union Pacific Railroad, Riverside Mobile Home Park, and Oso Flaco Lake Park. Major roads flooded would include portions of Highway 1 near the county line.

Whale Rock Dam At full capacity, Whale Rock reservoir contains 40,600 acre-feet of water behind an earth filled dam constructed in 1960. It is owned by the Whale Rock Commission and operated by the City of San Luis Obispo.

In the event of a complete dam failure, water is expected to flow in a southwesterly direction along Old Creek (approximately 1,000 feet in each direction of the centerline of the creek) up to the Town of Cayucos at 13th Street and Ocean Avenue. At 13th Street and Ocean Avenue the flooding area may widen to include 3rd Street to the north and Willow Creek (Montecito Road) to the south until it dissipates into the Pacific Ocean. Major impact to life and property to approximately one-third of the community of Cayucos is anticipated.

Approximately 1,500 residential, recreational and small business occupants could be affected. No special facilities would be affected by a dam failure. Major roads flooded may include portions of Highway 1.

Nacimientto Dam When Nacimientto Lake is full, it has a maximum storage capacity of 377,900 acre-feet of water behind the earth filled Nacimientto Dam. Construction of the dam was completed in 1957. It is owned and operated by Monterey County.

The Nacimientto River flows 12 miles from the dam to the confluence with the Salinas River. The Salinas River carries the Nacimientto Dam releases to the Pacific Ocean through the Salinas Valley. The trip is approximately 110 miles from the Nacimientto/Salinas confluence. About one mile of private property is located adjacent to the Nacimientto River below the dam. One vacation home is on this private property near the remaining river. The remaining property, Camp Roberts, is owned by the California National Guard, and contains no permanent residential structures near the river. The community of San Miguel and surrounding areas could receive minor flooding.

During a major flood event, Highway 101 will experience flooding from Camp Roberts through San Ardo. The normal access to Nacimientto Dam via the southerly Jolon Road Exit would be flooded in about two hours.

While most of the flood waters would flow north in and along the Salinas River in Monterey County, some flood waters would flow south toward the community of San Miguel. According to Monterey County, the estimated flood elevation will be 620 feet above sea level in San Miguel. The approximate elevation of San Miguel is 620 feet above sea level.

The estimated flood arrival time in San Miguel due to a failure of Nacimientto Dam is about one hour and forty-five minutes, with the peak arrival time estimated to be two hours and thirteen minutes. The time estimated to de-flood is three hours and forty-six minutes.

Arroyo Grande Creek Levee Arroyo Grande Creek drains a 157 square mile watershed located in west-central San Luis Obispo County. The main stem of Arroyo Grande Creek flows through the communities of Arroyo Grande and Oceano and is an important regional waterway for the communities of Arroyo Grande, Grover Beach, Oceano, Pismo Beach, and Avila Beach.

The lower Arroyo Grande Creek floodplain, or Cienaga Valley, is especially vulnerable to flooding because it lies at the downstream, lower gradient terminus of the large watershed. In the 1950's, severe flooding from Arroyo Grande Creek resulted in inundation of prime farmland in the Cienaga Valley with significant impact to existing infrastructure. To reduce future economic impacts to the agricultural economy and the growing urban and rural residential population, the community organized the Arroyo Grande Creek Flood Control Project. The main feature of the project was a levee system and trapezoidal channel that confined Arroyo Grande Creek in levees from its confluence with Los Berros Creek downstream to the Pacific Ocean. The project was completed in 1961 in order to protect homes and farmland in the Cienaga Valley.

The Arroyo Grande Creek Flood Control Project was constructed to convey the design capacity of 7,500 cubic feet per second (CFS) with 2 feet of freeboard. The originally constructed

channel was believed to provide flood protection from a storm with over a 50 year recurrence interval.

Due to challenges in maintaining the channel, such as inadequate funding and regulatory requirements, the channel has lost significant capacity since it was originally constructed over 40 years ago. Although the maintenance efforts are improving since assessments were approved in July 2006 to pay for maintenance on the channel, the existing capacity of the channel is estimated to be 2,500 CFS providing flood protection from a storm with only a 4.6 year recurrence interval. This means that the channel has the probability to overtop once every 4.6 years (Arroyo Grande Creek Erosion, Sedimentation, and Flooding Alternative Study, prepared by Swanson Hydrology and Geomorphology, January 4, 2006).

Under the existing conditions, the channel will most likely initially overtop the south levee between Highway 1 and the 22nd Street bridges.

The local threat of flood related damage is primarily confined to low-lying areas less than 50 feet above mean sea level that are immediately adjacent to the Arroyo Grande Creek levees. If the gradient is shallow, flood waters can spread over a large area. The primary effects of a flood can be destruction and damage to low-lying areas. In March 2001, during a high intensity rain event, the Arroyo Grande levee system was breached on the south side between the mouth and the Union Pacific railroad bridge.

Hundreds of acres of farmland and several residences were flooded in the Cienaga Valley. Impacts from the flooding persisted beyond the winter season as many of the areas with clay soils located in the southern portion of the valley remained saturated for many months. The northern levee remained intact, thereby protecting several residential developments, as well as the regional wastewater treatment plant that services the communities of Arroyo Grande, Oceano, and Grover Beach. Should the north levee have overtopped or breached, risk to human life would have been a threat.

Special facilities of concern include the South County Sanitation District's waste water treatment plant and the Oceano Airport. The plant and the airport are located immediately adjacent to the north levee of the channel between the mouth of Arroyo Grande Creek and the Union Pacific railroad bridge.

Damage from flooding due to the levee overtopping or breaching could range from minor to major property loss and death. Damage to roadways, communication systems, public services and infrastructure, along with emergency response and medical service can be expected.

Consequential damage could include electrical equipment being flooded, in turn resulting in a shock hazard; downstream flash flooding resulting in persons being caught in rapidly moving water; sewage systems could be flooded resulting in possible overflow conditions and a disruption of normal water supplies to the public.

The areas most at risk from flooding are those areas immediately adjacent to the channel and within the 100-year flood plain. Those areas most likely to be inundated have been identified on the maps found elsewhere in this document.

Santa Maria River Levee The Santa Maria River levee runs along the same area of the river as would be affected by a failure of Twitchell Dam. As such, the same procedures to be used for a Twitchell Dam failure can be used in the event of a Santa Maria River levee break.

The Santa Maria River levee was designed and built by the U.S. Army Corps of Engineers from 1959 to 1963 and is owned and operated by the county of Santa Barbara Department of Public Works' Flood Control District. The levee is built of river sand. The portion of the levee facing the river is covered with a layer of rock.

Following the Hurricane Katrina disaster the Army Corps of Engineers began a systematic assessment of flood control structures and facilities throughout the United States to measure their risk of potential failure. After their assessment of the Santa Maria River Levee, in March 2006, the Army Corps of Engineers placed the Santa Maria River Levee on the nationwide list of levees at risk of failure and declined to certify that it could withstand a 100-year flood.

The Flood Control District of the county of Santa Barbara is the lead agency responsible for the levee.

1.4.3 Emergency Preparedness

Dam or levee failure emergency procedures will be activated upon notification by the County Sheriff's Department, County Public Works, or other relevant authority. Following procedures in the County's Dam and Levee Failure Evacuation Plan, upon confirmation of a problem, actions taken will include notifying the public, as appropriate, possibly through EAS and mobilizing emergency response personnel. Public safety vehicle public address systems may be used to notify the public; for Lopez or Whale Rock Dams the Early Warning System sirens could be used to alert the public. Upon evacuation, shelters may need to be established. Additional action will be taken as defined in this plan or the County's Dam and Levee Failure Evacuation Plan which, by reference, is adopted as part of, and is compatible with, this plan.

1.5 Nuclear Power Plant

The Diablo Canyon Nuclear Power Plant is located on the coast approximately 12 miles southwest of the city of San Luis Obispo. The plant contains two power generating units, both of which are operational. Each unit is a pressurized water-type reactor having an electric power generating capacity in excess of 1,000 megawatts.

The plant is designed to use slightly enriched uranium dioxide (UO₂) as a fuel. This fuel poses no major concern in its unirradiated state as it has very low radioactivity. However, after being in the core during operation of the reactor, the fuel becomes highly radioactive from fission by-products. These highly radioactive by-products are the main hazard in a nuclear power plant accident.

When any nuclear power plant is operated, as with any other industrial facility, an accident is possible. The principal deterrent to an accident is prevention through correct design, construction and operation, including redundant safety systems, which assures that the integrity of the reactor

and related system is maintained. Protective systems are installed and are automatically activated to counteract the resulting effects when any part of the reactor system fails.

Spent fuel from the reactor is stored in a spent fuel water pool. This involves storing spent fuel rods under at least 20 feet of water, which provides adequate shielding from the radiation for anyone near the pool. The rods are moved into the water pools from the reactor along the bottom of water canals, so that the spent fuel is always shielded to protect workers.

The current spent fuel program at Diablo Canyon of water pool storage, as well as dry cask.

Dry cask storage allows spent fuel that has already been cooled in the spent fuel pool for at least one year to be surrounded by inert gas inside a container called a cask. The casks are typically steel cylinders that are either welded or bolted closed. The steel cylinder provides a leak-tight containment of the spent fuel. Each cylinder is surrounded by additional steel, concrete, or other material to provide radiation shielding to workers and members of the public. Some of the cask designs can be used for both storage and transportation.

Related to the transportation of dry casks to storage sites other than Diablo Canyon, while the authority related to moving the spent fuel off site to longer term storage areas does not rest with the County, the County is committed to the best of its ability and as information is obtained to monitor plans for such movement and be as involved as possible with the planning process for such.

While the probability of a radiological emergency at a power plant is extremely small, it is prudent to maintain emergency response plans for such the possibility of such an event. Such emergency response plans are overseen by, and must meet the requirements of, federal agencies.

Various local agencies within San Luis Obispo County work together to address emergency management and planning agencies related to nuclear power plant emergency planning, following guidelines set by the Federal Emergency Management Agency and the Nuclear Regulatory Commission. Many of these preparedness efforts by local government and related State agencies are coordinated by the County Office of Emergency Services.

1.5.1 Radiation and Hazards

The extent and severity of the radiation effect upon body cells depends upon the amount of radioactive materials, the type of radiation, the exposure rate and time, and how close it is to the body. In general, the closer the source of radiation is to the cells, the greater the possibility of injury.

There are two primary types of radiation that must be considered in nuclear power plant off site emergency response planning - beta particles and gamma rays. The fission by-products of nuclear power production generally emit both beta particles and gamma rays. Other types of radiation are not expected to contribute significantly to the total off site radioactive contamination following an accidental release from a nuclear power plant.

As used in this document, beta particle refers to a small, negatively-charged mass that is ejected from an atom as a result of nuclear rearrangement. Due to their limited penetrating ability, beta particles become a significant health hazard only when the radioactive materials emitting them are present on the surface of the skin or when they have been ingested or inhaled.

Body surface contamination from beta particle emitters will lead to irradiation of only the superficial body tissue. Ingestion or inhalation of beta particles is much more serious. Frequently the beta-emitting nuclides are isotopes of elements that can be incorporated into body constituents. They may result in long-term exposure of the cells, extensive irradiation, and subsequent cell death.

Gamma rays are a type of electromagnetic radiation also released from the nucleus of an atom. Because they have no mass, they can penetrate matter more readily than beta particles. They are capable of traveling significant distances in air and penetrating through the protective skin layer to the soft tissue below. This means the entire body can be irradiated from a gamma source outside the body. Similarly, when ingested or inhaled, gamma emitters can produce whole body irradiation, regardless of the location in the body where the radioisotope may be ultimately absorbed.

Determining the health effects of overexposure to radiation is complicated by the fact that there is a large range of variation in individual response. Some people may be very sensitive and others somewhat resistant to radiation. Determination of the dose/health effects relationship is further complicated by the fact that the effects of whole body irradiation differ from the effects of partial body exposure; a lethal dose in the first case might be readily tolerated in the second. The effects also depend on the timing of exposure, such as short term exposure (acute) vs. repeated (chronic) exposures spread out over days or weeks. Repeated exposure spread out over time permit a significant degree of recovery and therefore require a larger total dose to show the same effects as for an acute exposure.

1.6 Hazard Assessment for Fire

It is common knowledge that fire is a very destructive force, both to human life and property. Fortunately, the overwhelming majority of fires of all types, including most large fires, are handled by the fire service without the need of activating the overall county emergency response system. However, there are times the county may need to provide support to the fire service. The need to provide fire service support may arise out of the necessity to evacuate and shelter large numbers of people, provide disaster assistance to victims, activation/use of the Emergency Alert System, to provide facilities for command and coordination, or the need to declare a local emergency.

1.6.1. Special Situations

A primary threat of severe fire within the unincorporated area of San Luis Obispo County is from wildland fire. Of special concerns are urban interface fires, which involve wildland fires burning into and/or among urban type or other populated areas. As the 1985 "Las Pilitas Fire" (which burned close to 75,000 acres, a number of buildings and into the city of San Luis Obispo), the

1994 “41 Fire” (which burned close to 48,000 acres, 42 homes, a number of other buildings, and dozens of vehicles and burned into the city of Atascadero and threatened the city of San Luis Obispo) illustrated, this county is very susceptible to wildland and urban interface fires.

Calamities such as those in Santa Barbara County (1990, 2008, 2009), Oakland (1991), San Diego County (2003, 2007), and Los Angeles County (2008) provide examples of what can occur when a wildfire burns into urban areas or rural areas occupied by human improvements.

With the increased number of people living in rural areas of the county, the potential for damage, injury, and loss of life is a very real problem. The fact that approximately 40 to 45 percent of the county, as rated by the State, is "high" or "very high" wildland fire danger areas only compounds the problem. This is illustrated through past fires such as the 1996 “Highway 58 Fire”, which burned close to 107,000 acres as well as buildings, homes, and vehicles, and the 1997 “Logan Fire” which burned 50,000 acres.

Also a threat to the county is the possibility of a conflagration in an urban or similar area of the County. While structure fire conflagrations (other than wildland urban interface fires) are not common occurrences, the potential does exist for such a disaster to occur.

1.6.2 Effects of Fire Emergencies

The effects of a fire can vary from minor property or watershed damage to loss of life and significant damage to property and/or watershed. During and after a fire, additional effects may include:

- Need for Evacuation
- Need for Emergency Public Information
- Need to assist and/or shelter displaced people
- Need for sheltering/evacuation of large and small animals
- Utility Disruptions (Gas, Electric, Water, Sanitation)
- Transportation System Disruption (Roads, Traffic Management Problems)
- Need for Security
- School Disruptions
- Need for adequate facilities for fire Incident Command Posts
- Disaster assistance from federal and state government agencies

In essence, the potential direct and indirect effects and consequences of a severe fire can require support beyond the usual logistical needs of fire suppression forces.

1.6.3 Emergency Response Actions

The National Incident Management System (NIMS) and the Standardized Emergency Management System (SEMS), which include the Incident Command System (ICS), are the emergency management systems the County uses to manage its support role activities during a fire emergency. Cal Fire and the other response agencies within the County also use ICS as their emergency management system.

While the ICS organizational structure is based around certain principal activities (command, operations, planning, logistics, and finance), the County's ICS or related emergency management organization itself may not be fully staffed during a fire emergency. Since a fire emergency is the responsibility of fire agency/agencies, the County emergency management organization itself will mobilize only those ICS or related positions necessary to support the requesting fire agency.

These ICS positions may include command (joint IC with fire), public information for EAS, legal, finance, and logistical support and will work hand in hand with fire ICS in order to be consistent and avoid duplication of effort.

For clarification purposes, it needs to be made clear that the fire agencies will have in place an ICS organization that is staffed as fully as necessary, thus the County will generally be supplementing the fire ICS structure.

There may be occasion when minimal county support is requested and it is not necessary to staff formal ICS positions at the county level. Such occasions may include a request to activate the Emergency Alert System without any other assistance, or to provide personnel that will be used directly within the fire ICS (such as requesting personnel for fire PIO or liaison functions).

1.7 Transportation Emergencies

As the county's population increases and traffic flow grows larger on freeways and roadways throughout the county, the possibility of serious transportation emergencies increase. Although hazardous materials accidents are a possibility, those are discussed in another area of this document. The potential for transportation incidents other than those involving hazardous materials must be acknowledged.

1.7.1. Special Conditions

With the generally mild weather the county has, driving conditions throughout the county are usually not affected by adverse weather. However, when adverse weather does affect the county, the problems may be compounded by the inexperience of not usually driving in adverse weather. Heavy fog, snow or unforeseen events may cause numerous or large traffic problems within the county.

The county's role in such emergencies would be to provide support to State and County agencies such as the California Highway Patrol, the California Department of Transportation, or the County Public Works Department.

An additional special condition includes the fact that transportation may be hindered in the event of a severe shortage of fuel. In an emergency situation, it may become necessary for the County Emergency Services Director to take action to ensure supplies remain available for emergency use and to ensure the welfare and safety of the public

1.7.2 Emergency Response Actions

In addition to general emergency support and coordination, the County may be forced to use authorities allowed under state and local law. This may include prioritizing resource needs, including private fuel supplies.

1.8 Tsunami Threat

Tsunamis are generated by large earthquakes that occur under or near the ocean. In deep ocean water, Tsunamis may travel as fast as 600 miles per hour. Once a force of water enters the shallow waters of coastlines the velocity of its waves decrease and the wave height increases. Tsunamis can crest to heights of more than 100 feet and hit the shoreline with destructive force. This force can be disastrous to the safety of coastal residents, visitors, and property.

As noted in a “Tsunami Inundation Mapping” paper dated July 15, 2005 by Jose C. Borrero, Ph.D. and Costas E. Synolakis, Ph. D. of the University of Southern California’s Tsunami Research Group, this part of the coastline has the unique distinction of being one of the few locations in the United States where a near source tsunami was generated and affected the coastline. This occurred in November 1927 when a magnitude 7.2 earthquake struck the area west of Point Aguello (Byerly, 1930)

1.8.1 Special Situation

Tsunamis are not a common occurrence along the Central California coast, however there is always the possibility of one occurring. A tsunami that is caused by a severe earthquake centered near the local coast may strike suddenly, with no or very little warning time. Tsunamis that originate elsewhere in the Pacific may travel 10 to 12 hours before striking the California coastline. This would provide enough time to receive a warning from the Alaska Warning Center, which is responsible for California tsunami warnings (the Alaska Warning Center works closely with the Pacific Tsunami Warning Center). This warning would be issued to the California State Warning Center, which in turn notifies affected counties.

1.8.2 Emergency Response Actions

If a warning is received in time to advise the public in affected coastal areas such information will be passed on and shared as necessary and as possible. Preparations may include securing buildings and evacuating shoreline areas. This may also involve opening temporary shelters and restricting access to coastal areas.

For earthquakes which occur near the coast, a Tsunami may occur with no time for a warning to be issued. The International Tsunami Information Center states that if an strong earthquake is felt near a shoreline or low-lying coastal area it is a natural warning of possible, immediate danger. Keep calm and quickly move to higher ground away from the coast.

Should time allow, the County will be working with the National Weather Service and the Tsunami Warning Center to determine how far inland evacuations should occur.

Additional information is available in the County's tsunami emergency response plan.

1.9 Aircraft Incidents

The vast majority of aircraft accidents are handled by appropriate public safety emergency response agencies without the need for activation of, or support from, the County's overall emergency organization.

However, there may be times when such support could be necessary, such as if aircraft crashed into a community, causing disastrous damage.

1.9.1 Special Situation

San Luis Obispo County has three public airports, located in Paso Robles, San Luis Obispo, and Oceano. As of March 2012 only the San Luis Obispo County Airport offered regular scheduled commercial passenger service, which is provided by regional jet aircraft or turboprop commuter aircraft. There are also a number of private airstrips throughout the county. There are military facilities that helicopters might use located at Camp San Luis, and facilities that are used at Camp Roberts. Military aircraft also occasionally fly over the county enroute to other locations.

There are also areas for use by helicopters at Twin Cities Hospital in Templeton and it is anticipated to soon ... SVRMC ...

San Luis Obispo County is over flown by commercial flights traveling the Los Angeles - San Francisco corridor as well as flying en route to other destinations and by military aircraft from bases such as Lemoore Naval Air Station, in addition to the above mentioned locations.

The above situations provide for the unlikely event of an aircraft accident. Such an event could cause extensive damage, injury, and loss of life to those in the aircraft, and to people and buildings on the ground.

Such an incident did occur in December 1987, when a commercial jetliner using the LA - SF corridor crashed. The airliner went down about ten miles east of the community of Cayucos. The crash of the jetliner, which thought to be caused by a gunman shooting one passenger, the pilot, and the co-pilot, killed all 47 people on board. While tragic, this crash could have been even worse had the airliner gone down in a populated area. In January 2000, a commercial airliner went down off the coast of Ventura County, while was en route to San Francisco from Mexico.

1.9.2 Emergency Response Actions

In addition to public safety emergency response agencies, the activation of at least a portion of the overall county emergency management organization may be necessary to coordinate such events as communications and related logistical needs. As an example, the County EOC was used during the December 1987 commercial airliner crash, as was the Ventura County EOC for the January 2000 commercial airliner accident off the coast of that county.

Initial response actions will be by public safety agencies in the field. Follow up support activities may include providing logistical support to public safety agencies and the federal agencies which will have Incident Command authority over an airliner accident.

1.10 Civil Disturbance

Civil disturbance includes incidents that are intended to disrupt a community to the degree that law enforcement intervention is required to maintain public safety. Civil disturbances are generally associated with controversial political, judicial, or economic issues and/or events.

There are locations within San Luis Obispo County which have large public gatherings, including events which have attracted crowds in the ranges of 30,000 - 40,000 people to San Luis Obispo. However, rarely is there an event which has the potential for unstable conditions which could possibly impact an Operational Area jurisdiction's ability to provide sufficient law enforcement and fire protective services. Although, as illustrated by a civil disturbance related to an event at California Polytechnic State University, San Luis Obispo, during the early 1990s which required law enforcement assistance from outside the Operational Area, it remains a possibility.

The effects of civil disturbances are varied and are usually based upon the type, severity, scope and duration of the disturbance. The effects of civil disturbances include traffic congestion or gridlock, illegal assemblies, disruption of utility service, property damage, injuries and potentially loss of life.

Law enforcement agencies train for such events. The overall emergency organization may be needed for logistical support such as emergency public information, public works barriers, or related needs.

1.11 Terrorism

Terrorism involves a struggle between competing principles and ideologies outside conventional war. Principal targets include military personnel and facilities, commercial establishments, government buildings and property, and/or any location large numbers of people congregate.

The effects of terrorist activities can vary significantly, depending on the type, severity, scope, and duration of the activity. Terrorist activities may result in disruption of utility services, property damage, injuries and the loss of lives.

While San Luis Obispo County is a low population area, with generally low population density when compared with major metropolitan areas, the possibility of a terrorist action cannot be discounted. Terrorist actions may include biological, chemical, incendiary, explosive, nuclear/radiological, or electronic (such as software system) attacks.

While it is prudent to increase preparedness efforts to address these threats throughout the nation, including San Luis Obispo County, there are also a number of emergency management systems and procedures which have been in place for some time that can help address these potential incidents. Some of these systems have been in place for a number of years, while others have been - and continue to be - developed due to the new awareness and need to address terrorism related issues

While the FBI is the lead federal investigative agency for terrorism, overall management of the consequences of actual or threatened terrorist incidents is the responsibility of the affected local jurisdiction. In addition, initial response actions will most likely be led and overseen by local agencies. Command and control of all incident activities remains with the jurisdictional incident commander and/or unified command. The San Luis Obispo County Sheriff's Department or other law enforcement agency of jurisdiction are the lead agencies at the local level for law enforcement aspects of an incident.

In some smaller threats or incidents, local law enforcement will retain jurisdiction and control of the entire process, with the federal law enforcement community providing only support and resources as needed.

FBI representatives regularly interact with local law enforcement, emergency management representatives, and other organizations within the San Luis Obispo County Operational Area.

1.12 Adverse Weather

The entire County is susceptible to the various types of adverse weather in any given year.

Drought: Periods of drought can have significant environmental, agricultural, health, economic and social consequences. Drought can also reduce water quality, because lower water flows reduce dilution of pollutants and increase contamination of remaining water sources. Wildfires are typically larger and more severe in periods of drought due to the lower fuel moisture content. As seen by the third dry in a row, the drought in existence as of Summer, 2014 can cause significant damages to agriculture, reduction and loss of drinking water supplies, and many other economic, environmental, and social consequences.

In 2014, with California facing one of the most severe droughts on record, Governor Brown declared a drought State of Emergency in January 2014 and directed state officials to take all necessary actions to prepare for water shortages. The state has continued to lead the way to make sure California is able to cope with an unprecedented drought. The San Luis Obispo County Board of Supervisors proclaimed a local emergency in March 2014 due to the drought and its impacts.

Freeze: Freeze is rarely a threat to human life in this county. The major impact will be to agricultural operations where crop damage to high value products such as strawberries, citrus, grapes and row crops such as lettuce and celery can be extensive.

Hail Storms: Significant amounts of damage to property notably to automobiles, skylights, and glass-roofed structures can occur from hail storms. The damage to crops can also be severe. Fortunately, hail very rarely kills anyone, however each year dozens of people are injured when they are not able to find adequate shelter.

Wind Storms, Thunderstorms, and Tornados: These wind related events can be quite destructive, especially in urban areas where falling trees and branches can result in considerable property damage. Occasionally, summer thunderstorms (lightning) will cause wildfire in the coastal mountain regions of the county.

Dense Fog: Reduced visibility and slick road conditions caused by dense fog increase the likelihood for traffic accidents.